

Attorney's Docket No. 998-816

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Messina *et al.*
Serial No.: 09/990,115
Filed: November 21, 2001

Group Art Unit: 1771
Confirmation No.: 2803
Examiner: Cole, Elizabeth M.

For: SOUND ATTENUATING/ABSORBING LAMINATES AND METHODS OF
MAKING SAME

December 13, 2004

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANTS' BRIEF ON APPEAL UNDER 37 C.F.R. §41.37

Sir:

This Appeal Brief is filed pursuant to the "Notice of Appeal to the Board of Patent Appeals and Interferences" filed November 10, 2004.

Real Party In Interest

The real party in interest is assignee Collins & Aikman Products Co., Troy, Michigan.

Related Appeals and Interferences

Appellants are aware of no appeals or interferences that would be affected by the present appeal.

Status of Claims

Appellants appeal the final rejection of Claims 1-25 and 52-72 which, as of the filing date of this Brief, remain under consideration. The attached Appendix A presents the claims at issue as finally rejected in the Final Office Action of June 23, 2003 ("Final Action") and the Advisory Action of October 6, 2004 ("Advisory Action").

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Status of Amendments

The attached Appendix A presents the claims. Other than the withdrawal of Claims 27-51 and 73-106, the claims have not been amended. The withdrawal of Claims 27-51 and 73-106 was entered.

Summary of the Claimed Subject Matter

The present invention, as recited in Claims 1-26 and 52-72, is directed to methods of producing sound attenuating/absorbing laminates for use within vehicles as floor coverings and other interior trim components. According to embodiments of the present invention, a sound attenuating laminate configured to be attached to an article, such as a vehicle panel, includes a substrate having a shape of the article, and polyurethane attached to selected portions of the substrate. The polyurethane is non-porous and serves as a barrier to attenuate sound passing through the substrate. Additional non-porous polyurethane is added to one or more selected portions of the polyurethane layer to enhance sound attenuation characteristics in the one or more selected portions. According to embodiments of the present invention, the substrate surface(s) may have recessed portions formed therein, and additional non-porous polyurethane is applied in these recessed portions to further enhance sound attenuation characteristics. According to embodiments of the present invention, one or more secondary articles (*e.g.*, plastic pass-throughs, etc.) are molded-in with the substrate and additional non-porous polyurethane is applied over the molded-in articles to further enhance sound attenuation characteristics.

For example, independent Claim 1 recites a method of forming a sound attenuating laminate wherein polyurethane is added to selected portions of a substrate after the substrate is formed into the shape of an article:

- ascertaining acoustic properties of an article on which the sound attenuating laminate is to be placed to identify areas wherein additional sound attenuation characteristics are necessary;
- forming a substrate in the shape of the article; and
- applying polyurethane on the substrate, wherein the polyurethane is applied substantially only in the identified areas wherein enhanced sound attenuation characteristics are required.

Independent Claim 16 recites a method of forming a sound attenuating laminate wherein polyurethane is added to selected locations of a substrate before the substrate is formed into the shape of an article:

- ascertaining acoustic properties of an article on which the sound attenuating laminate is to be placed to identify areas wherein additional sound attenuation characteristics are necessary;
- applying a layer of polyurethane within a mold;
- applying additional polyurethane to the polyurethane layer at selected locations where enhanced sound attenuation characteristics are required;
- attaching a substrate to the layer of polyurethane; and
- forming the substrate and polyurethane into a sound attenuating laminate having a shape of the article.

According to other embodiments of the present invention, sound absorbing laminates configured to be attached to an article, such as a vehicle panel, include a substrate having a shape of the article, and breathable polyurethane attached to selected portions of the substrate. The polyurethane serves as an absorber of sound (*e.g.*, sound generated within a vehicle compartment). Additional breathable polyurethane is added to one or more selected portions of the polyurethane layer to enhance sound absorption characteristics in the one or more selected portions. According to embodiments of the present invention, the substrate surface(s) may have recessed portions formed therein, and additional breathable polyurethane is applied in the one or more recessed portions to further enhance sound absorption characteristics.

For example, independent Claim 52 recites a method of forming a sound absorbing laminate wherein polyurethane is added to selected portions of a substrate after the substrate is formed into the shape of an article:

- ascertaining acoustic properties of an article on which the sound absorbing laminate is to be placed to identify areas wherein additional sound absorption characteristics are necessary;
- forming a substrate in the shape of the article, wherein the substrate comprises opposite first and second surfaces, and wherein the substrate first surface is configured to be attached to the article in face-to-face relationship therewith; and
- applying a layer of breathable polyurethane on the substrate second surface, wherein the polyurethane is applied substantially only in the identified areas wherein enhanced sound absorption characteristics are required.

Independent Claim 65 recites a method of forming a sound absorbing laminate wherein polyurethane is added to selected locations of a substrate before the substrate is formed into the shape of an article:

- ascertaining acoustic properties of an article on which the sound absorbing laminate is to be placed to identify areas wherein additional sound absorption characteristics are necessary;

applying a layer of breathable polyurethane within a mold;
applying additional breathable polyurethane to the breathable polyurethane layer at selected locations where enhanced sound absorption characteristics are required;
attaching a substrate to the layer of breathable polyurethane; and
forming the substrate and breathable polyurethane via the mold into a sound absorbing laminate having a shape of the article, wherein the substrate is configured to be attached to the article in face-to-face relationship therewith.

Grounds of Rejection to be Reviewed on Appeal

Claims 1-26 and 52-72 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,071,619 to De Winter ("De Winter") in view of U.S. Patent No. 6,335,379 to Leenslag *et al.* (Leenslag").

Arguments

I. Introduction

Each of the pending claims of the present application stands rejected as obvious under 35 U.S.C. § 103(a). A determination under §103 that an invention would have been obvious to someone of ordinary skill in the art is a conclusion of law based on fact. *Panduit Corp. v. Dennison Mfg. Co.* 810 F.2d 1593, 1 U.S.P.Q.2d 1593 (Fed. Cir. 1987), *cert. denied*, 107 S.Ct. 2187. After the involved facts are determined, the decision maker must then make the legal determination of whether the claimed invention as a whole would have been obvious to a person having ordinary skill in the art at the time the invention was unknown, and just before it was made. *Id.* at 1596. The United States Patent and Trademark Office (USPTO) has the initial burden under § 103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

To establish a *prima facie* case of obviousness, the prior art reference or references when combined must teach or suggest *all* the recitations of the claims, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. § 2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. M.P.E.P. § 2143.01(citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990)). As emphasized by the Court of Appeals for the Federal Circuit, to support combining references, evidence of a suggestion, teaching, or motivation to

combine must be **clear and particular**, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). In an even more recent decision, the Court of Appeals for the Federal Circuit has stated that, to support combining or modifying references, there must be **particular** evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000).

Furthermore, as recently stated by the Federal Circuit with regard to the selection and combination of references:

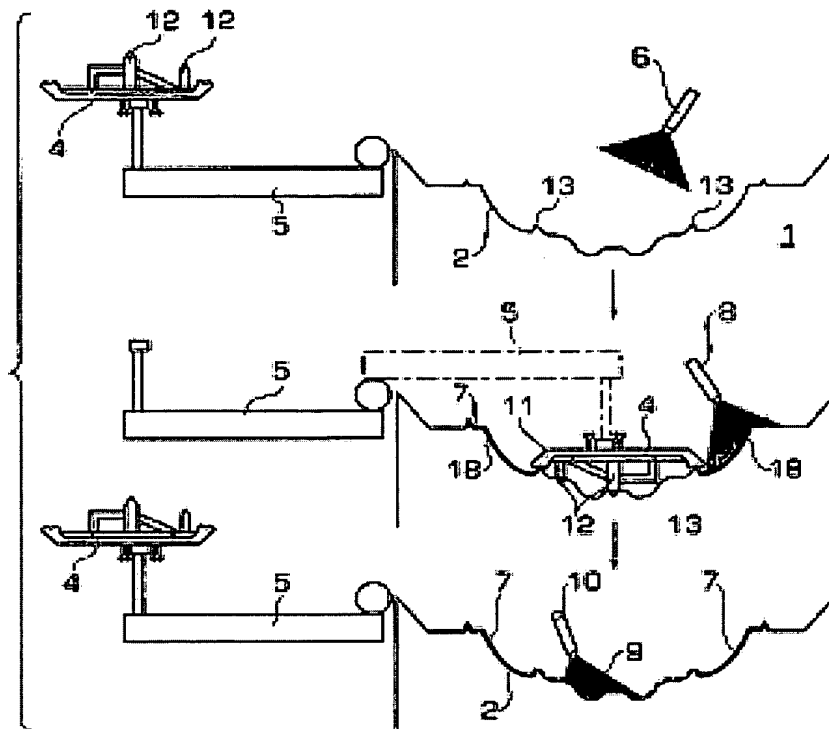
This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher." W.L. Gore v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983). Thus the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion....

In re Sang Su Lee, 277 F.3d 1338, 1343 (Fed. Cir. 2002).

Appellants respectfully submit that the pending claims are patentable over the cited references because the cited combination fails to disclose or suggest the recitations of the pending claims and the reasoning behind such combination has not been established. The patentability of the pending claims is discussed in detail hereinafter.

II. De Winter and Leenslag

The primary reference, De Winter, describes a method for manufacturing an elastomeric skin comprising surface portions of at least two differently colored elastomeric materials, by spraying the elastomeric materials against a mold surface. A portion of a mold surface is shielded off by a mask and a layer of a first elastomeric material is sprayed onto the surface and onto the edge of the mask. The mask is removed and a second elastomeric material is sprayed onto the previously-masked portion of the mold surface. This is illustrated in Fig. 1 of De Winter, which is set forth below.



De Winter requires that the edges 11 of the mask 4 be placed on top of upstanding edges 13 of the mold surface 2 so that the transition between both elastomeric materials 7, 9 is achieved on these upstanding edges 13, *i.e.*, in an outer recess of the elastomeric skin resulting in an aesthetic visual parting line. Also, De Winter requires that the edges 11 of the mask 4 be maintained at a distance from the mold surface 2 such as to avoid contact between the layer of first elastomeric material 7 sprayed onto the mold surface 2 and the mask 4. De Winter states that an object of his invention is to provide a method for manufacturing an elastomeric skin of at least two elastomeric materials which achieves an aesthetic visual parting line between the elastomeric materials. (De Winter, Col. 1, Lines 17-20).

The secondary reference, Leenslag, describes flexible polyurethane foams and a process for preparing such foams. Flexible polyurethane foams, according to Leenslag, are prepared by reacting a polyisocyanate and a polyfunctional isocyanate-reactive polymer under foam forming conditions to prepare a rigid polyurethane foam and, then, crushing this rigid polyurethane foam. Leenslag states that his flexible foams may be moulded foams or slabstock foams and may be used as cushioning material in furniture and automotive seating and in mattresses, as carpet backing, as hydrophilic foam in diapers and as packaging foam;

and that they may be used for acoustic applications, e.g. sound insulation. (Leenslag, Col. 2, Lines 24-29).

III. Independent Claims 1, 16, 52 and 65 Are Patentable Over De Winter and Leenslag

The primary reference, De Winter, fails to teach or suggest ascertaining acoustic properties of an article on which a sound attenuating laminate is to be placed, as recited in each of Appellants' independent Claims 1, 16, 52 and 65. De Winter fails to teach or suggest applying polyurethane only in the identified areas of the substrate wherein sound attenuation characteristics are required. The Office Action of February 3, 2004 ("Action") conceded that De Winter is "silent about the sound attenuating properties." (Action, Page 3). Moreover, the Final Action also concedes that "De Winter does not disclose considering sound attenuating as part of the selection of materials." (Final Action, Page 2).

In addition, De Winter fails to teach or suggest applying additional sound attenuating/absorbing material to a substrate positioned within a mold and *then* forming the substrate and sound attenuating/absorbing material into a sound attenuating laminate having the shape of an article to which the sound attenuating laminate is to be attached, as recited in Appellants' independent Claims 16 and 65.

The secondary reference, Leenslag, fails to teach or suggest ascertaining acoustic properties of an article on which a sound attenuating laminate is to be placed and applying polyurethane only in the identified areas where sound attenuation characteristics are required. Moreover, Leenslag fails to teach or suggest applying additional sound attenuating/absorbing material to a substrate positioned within a mold and *then* forming the substrate and sound attenuating/absorbing material into a sound attenuating laminate having the shape of an article to which the sound attenuating laminate is to be attached.

The Final Action states that "Leenslag teaches employing the polyurethane foams for sound insulation" and that "by virtue of teaching employing the foams for sound insulation, Leenslag is implicitly teaching that the sound has been noticed, (which corresponds to the step of ascertaining acoustic properties) and that the foam should be applied where the sound is a problem, (which corresponds to applying the polyurethane on the substrate only in the identified areas)." (Final Action, Page 2). The Final Action also states that "in order to apply a sound deadening layer as is taught by Leenslag, the sound must first have been heard and

recognized as undesirable and the sound deadening material would necessarily be placed in those regions where the sound would be deadened." (Final Action, Page 2).

The Advisory Action of October 6, 2004, continues this argument by stating that "since Leenslag teaches using polyurethane foams as sound insulation that the sounds which the sound insulation is intended to absorb or muffle would have to first have been ascertained and that they would have to have been considered to be problematic, i.e., in excess of a threshold level of acceptability." (Advisory Action, Page 2).

Appellants respectfully submit that the Final Action's conclusion that the present invention is obvious over the combination of De Winter and Leenslag is not supported by clear and particular evidence, as required by the Federal Circuit. Neither De Winter nor Leenslag, alone or in combination, teach or suggest all the recitations of Appellants' independent claims. In fact, the Final Action simply relies on broad conclusions without any evidence at all. For example, the Final Action states that "Leenslag is implicitly teaching that the sound has been noticed" and then broadly concludes that this "corresponds to the step of ascertaining acoustic properties". The Final Action also states that Leenslag is implicitly teaching that foam should be applied where sound is a problem and that this corresponds to "applying the polyurethane on the substrate only in the identified areas."

The Final Action fails to identify any passages within either De Winter or Leenslag that support this conclusion with clarity and/or particularity. Specifically, the Final Action fails to identify where in Leenslag it is taught or suggested to ascertain acoustic properties of an article on which a sound attenuating laminate is to be placed and then applying polyurethane *only* in the *identified* areas where sound attenuation characteristics are required. The Final Action's conclusions are based solely on the argument that, because Leenslag mentions that foams described therein can be used for sound insulation and automotive seating, the skilled artisan would be motivated to modify De Winter to mask areas of a mold surface corresponding to areas of an elastomeric skin not requiring sound attenuation. However, based on the fact that the mask described by De Winter is not utilized for the purpose of applying elastomeric material on the basis of sound attenuation characteristics, Appellants' respectfully submit that one skilled in the art would not be motivated to modify De Winter based on the statement that the Leenslag foams can be used for sound insulation and automotive seating.

Appellants respectfully submit that the skilled artisan would not be motivated by Leenslag to modify De Winter such that sound attenuating/absorbing material is applied only to areas where sound attenuation characteristics are required. The skilled artisan looks to De Winter for how to apply different colored materials to a substrate aesthetically, not how to apply sound attenuating/absorbing material for acoustic purposes. Appellants respectfully submit that such a modification would likely destroy the intended purpose of De Winter, since areas where sound attenuating/absorbing material may be required on a substrate may not necessarily be at locations where an aesthetically pleasing parting line can be achieved.

Appellants respectfully submit that, in view of the above arguments, independent Claims 1, 16, 52 and 65, and all claims depending therefrom, are not rendered obvious by De Winter, alone or in combination with Leenslag. Accordingly, Appellants respectfully request reversal of the present rejections under 35 U.S.C. §103.

IV. Various Dependent Claims Are Independently Patentable

Dependent Claims 2-10, 11-18, 30-36 and 38-43 are patentable per the patentability of the independent base claims from which they depend. Many of the dependent claims are also independently patentable. The independent patentability of the dependent claims will be discussed below

Claim 8 is patentable by virtue of its dependence on patentable independent Claim 1 as described above. In addition, Claim 8 recites *identifying areas of the article through which sound within a predetermined frequency range passes at an intensity level that exceeds a threshold intensity level*. Neither De Winter nor Leenslag, alone or in combination, teaches or suggests ascertaining acoustic properties of an article that includes identifying areas of the article through which sound within a predetermined frequency range passes at an intensity level that exceeds a threshold intensity level.

The Final Action states that "the teaching of Leenslag regarding the use of sound deadening layers in automotive trim parts implicitly describes both identifying areas of articles through which sound passes at an undesirable level and employing the sound deadening material in those regions to deaden the sound." (Final Action, Pages 2-3). Appellants respectfully submit that the Final Action's reasoning is merely conclusory without clear and particular evidence from any source, including the primary and secondary references. Leenslag merely states that his flexible foam can be used as acoustic insulation.

Leenslag does not set forth, or even suggest, any sort of method for identifying areas of a substrate where sound attenuation is required. As such, Appellants respectfully submit that Claim 8 is independently patentable. For at least the same reason, Claim 23 is independently patentable.

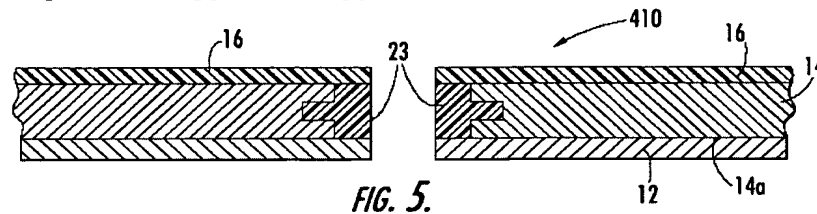
Claim 14 is patentable by virtue of its dependence on patentable independent Claim 1 as described above. In addition, Claim 14 recites *wherein the substrate has one or more recessed portions formed therein, and wherein applying polyurethane onto the substrate comprises applying polyurethane into the one or more recessed portions*. Neither De Winter nor Leenslag, alone or in combination, teaches or suggests a substrate having one or more recessed portions formed therein that are in identified areas where enhanced sound attenuation characteristics are required, and wherein applying polyurethane onto the substrate comprises applying polyurethane into the one or more recessed portions. Nothing in either De Winter or Leenslag teaches or suggests applying polyurethane into recessed portions *because* the recessed portions are in areas of a substrate requiring additional sound attenuating material.

The Final Action states that "De Winter teaches recessed portions" (Final Action, Page 3). However, the Final Action fails to identify any passage in De Winter for this alleged teaching. As such, Appellants respectfully submit that Claim 14 is independently patentable. For at least the same reason, Claim 63 is independently patentable.

Claim 15 is patentable by virtue of its dependence on patentable independent Claim 1 as described above. In addition, Claim 14 recites *integrally forming a secondary article with the substrate, and wherein applying polyurethane onto the substrate comprises applying polyurethane into areas adjacent the secondary article*. Neither De Winter nor Leenslag, alone or in combination, teaches or suggests forming a substrate in the shape of the article that comprises integrally forming a secondary article with the substrate, and wherein applying polyurethane onto the substrate comprises applying polyurethane into areas adjacent the secondary article.

The Final Action states that "the claim is interpreted to read that the substrate with the coating is formed into a secondary article, i.e., a panel would be formed into a dashboard, etc., which is taught by De Winter." (Final Action, Page 3). Appellants respectfully assert that the claim interpretation made by the Final Action is incorrect.

Fig. 5 from Appellants' application is set forth below:



In **Fig. 5**, a sound attenuating laminate **410** includes a substrate **14** having opposite first and second surfaces **14a**, **14b**. A secondary article (*e.g.*, a plastic pass-through) **23** is molded-in with the substrate **410**. The first surface **14a** is attached to an article **12**, such as a vehicle panel, as illustrated. The article **12** includes an aperture that is in communication with the aperture in the secondary article **23**. Accordingly, an item, such as a cable, can be extended through the article aperture and through the sound attenuating laminate **410**. A polyurethane barrier layer **16** is applied to the substrate second surface **14b** such that it overlies the molded-in secondary article **23** and surrounding area. The polyurethane barrier layer **16** is a non-porous polyurethane and is configured to attenuate sound passing through the article **12** and through the substrate **14**. The additional polyurethane **16** enhances sound attenuation characteristics of the sound attenuating laminate **410** in the area of the molded-in secondary article **23**.

De Winter does not teach or suggest integrally forming a secondary article, such as a plastic pass-through, with a substrate. Moreover, De Winter does not teach or suggest applying polyurethane into areas adjacent an integrally formed secondary article, such as a plastic pass-through. Leenslag fails to provide the missing teachings of De Winter. As such, Appellants respectfully submit that Claim 15 is independently patentable. For at least the same reason, Claims 26 and 64 are independently patentable.

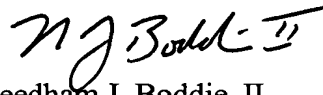
V. Conclusion

In light of the above discussion, Appellants submit that each of the pending claims is patentable over the cited references and, therefore, request reversal of the rejections of Claims 1-25 and 52-72.

It is not believed that an extension of time and/or additional fee(s) are required, beyond those that may otherwise be provided for in documents accompanying this paper. In the event, however, that an extension of time is necessary to allow consideration of this paper, such an extension is hereby petitioned for under 37 C.F.R. §1.136(a). Any additional

fees believed to be due in connection with this paper may be charged to Deposit Account No. 50-0220.

Respectfully submitted,



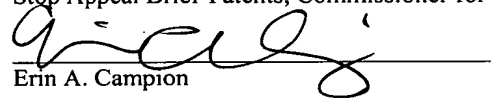
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Erin A. Campion

APPENDIX A
Pending Claims Serial No.: 09/990,115
Filed: November 21, 2001

1. (Original) A method of forming a sound attenuating laminate, comprising:
ascertaining acoustic properties of an article on which the sound attenuating laminate is to be placed to identify areas wherein additional sound attenuation characteristics are necessary;
forming a substrate in the shape of the article; and
applying polyurethane on the substrate, wherein the polyurethane is applied substantially only in the identified areas wherein enhanced sound attenuation characteristics are required.
2. (Original) The method of Claim 1, wherein the substrate comprises thermoformable fibrous material.
3. (Original) The method of Claim 1, wherein the polyurethane is applied by spraying.
4. (Original) The method of Claim 3, wherein the polyurethane comprises a filler selected from the group consisting of calcium carbonate, calcium hydroxide, aluminum trihydrate, talc, bentonite, barytes, silica, clay and mica.
5. (Original) The method of Claim 1, wherein the article is a firewall and the sound attenuating laminate is a dashboard insulator.
6. (Original) The method of Claim 1, wherein the article is a vehicle floor and the sound attenuating laminate is a floor covering.
7. (Original) The method of Claim 1, wherein the article is a vehicle panel and the sound attenuating laminate is a vehicle interior trim component.

8. (Original) The method of Claim 1, wherein ascertaining acoustic properties of an article comprises identifying areas of the article through which sound within a predetermined frequency range passes at an intensity level that exceeds a threshold intensity level.

9. (Original) The method of Claim 8, wherein the substrate comprises opposite first and second surfaces and is configured to be attached to the article in face-to-face relationship therewith, and wherein applying polyurethane on the substrate comprises applying polyurethane onto the substrate first surface.

10. (Original) The method of Claim 1, wherein applying polyurethane on the substrate comprises:

applying polyurethane on the substrate to form a polyurethane layer having a substantially constant thickness; and

spraying additional polyurethane on one or more selected portions of the polyurethane layer.

11. (Original) The method of Claim 1, wherein applying polyurethane on the substrate comprises applying polyurethane on the substrate to form a polyurethane layer having a first thickness in a first portion and a second thickness greater than the first thickness in a second portion.

12. (Original) The method of Claim 1, wherein ascertaining acoustic properties of an article on which the sound attenuating laminate is to be placed to identify areas wherein enhanced sound attenuation characteristics are required comprises generating a sound intensity map of the article.

13. (Original) The method of Claim 1, wherein applying polyurethane on the substrate comprises:

identifying areas of the substrate in which apertures are to be formed; and
avoiding the identified areas when applying the polyurethane onto the substrate.

14. (Original) The method of Claim 1, wherein the substrate has one or more recessed portions formed therein, and wherein applying polyurethane onto the substrate comprises applying polyurethane into the one or more recessed portions.

15. (Original) The method of Claim 1, wherein forming a substrate in the shape of the article comprises integrally forming a secondary article with the substrate, and wherein applying polyurethane onto the substrate comprises applying polyurethane into areas adjacent the secondary article.

16. (Original) A method of forming a sound attenuating laminate, comprising:
ascertaining acoustic properties of an article on which the sound attenuating laminate is to be placed to identify areas wherein additional sound attenuation characteristics are necessary;
applying a layer of polyurethane within a mold;
applying additional polyurethane to the polyurethane layer at selected locations where enhanced sound attenuation characteristics are required;
attaching a substrate to the layer of polyurethane; and
forming the substrate and polyurethane into a sound attenuating laminate having a shape of the article.

17 (Original) The method of Claim 16, wherein the substrate comprises thermoformable fibrous material.

18. (Original) The method of Claim 16, wherein the polyurethane is applied by spraying.

19. (Original) The method of Claim 18, wherein the polyurethane comprises a filler selected from the group consisting of calcium carbonate, calcium hydroxide, aluminum trihydrate, talc, bentonite, barytes, silica, clay and mica.

20. (Original) The method of Claim 16, wherein the article is a firewall and the sound attenuating laminate is a dashboard insulator.

21. (Original) The method of Claim 16, wherein the article is a vehicle floor and the sound attenuating laminate is a floor covering.

22. (Original) The method of Claim 16, wherein the article is a vehicle panel and the sound attenuating laminate is a vehicle interior trim component.

23. (Original) The method of Claim 16, wherein ascertaining acoustic properties of an article comprises identifying areas of the article through which sound within a predetermined frequency range passes at an intensity level that exceeds a threshold intensity level.

24. (Original) The method of Claim 23, wherein the substrate comprises opposite first and second surfaces and is configured to be attached to the article in face-to-face relationship therewith, and wherein applying polyurethane on the substrate comprises applying polyurethane onto the substrate first surface.

25. (Original) The method of Claim 16, wherein ascertaining acoustic properties of an article on which the sound attenuating laminate is to be placed to identify areas wherein enhanced sound attenuation characteristics are required comprises generating a sound intensity map of the article.

26. (Original) The method of Claim 16, wherein forming the substrate and polyurethane into a sound attenuating laminate having a shape of the article comprises integrally forming a secondary article within the substrate.

27. (Withdrawn) A sound attenuating laminate configured to be attached to an article, comprising:

a substrate having a shape of the article; and

polyurethane attached to selected portions of the substrate, wherein the polyurethane is non-porous and is configured to attenuate sound passing through the substrate.

28. (Withdrawn) The sound attenuating laminate of Claim 27, wherein the substrate comprises thermoformable fibrous material.

29. (Withdrawn) The sound attenuating laminate of Claim 27, wherein the polyurethane comprises a filler selected from the group consisting of calcium carbonate, calcium hydroxide, aluminum trihydrate, talc, bentonite, barytes, silica, clay and mica.

30. (Withdrawn) The sound attenuating laminate of Claim 27, wherein the polyurethane comprises:

a layer of polyurethane having a substantially constant thickness; and
additional non-porous polyurethane added to one or more selected portions of the polyurethane layer.

31. (Withdrawn) The sound attenuating laminate of Claim 27, wherein the polyurethane comprises a layer of polyurethane having a first thickness in a first portion and a second thickness greater than the first thickness in a second portion.

32. (Withdrawn) The sound attenuating laminate of Claim 27, wherein the substrate comprises opposite first and second surfaces, wherein the first surface is configured to be attached to the article in contacting face-to-face relationship therewith, and wherein the polyurethane is attached to selected portions of the substrate second surface.

33. (Withdrawn) The sound attenuating laminate of Claim 32, further comprising additional non-porous polyurethane added to one or more selected portions of the polyurethane.

34. (Withdrawn) The sound attenuating laminate of Claim 32, wherein the substrate first surface has one or more recessed portions formed therein, and wherein polyurethane is applied in the one or more recessed portions.

35. (Withdrawn) The sound attenuating laminate of Claim 32, wherein the substrate second surface has one or more recessed portions formed therein, and wherein polyurethane is applied in the one or more recessed portions.

36. (Withdrawn) The sound attenuating laminate of Claim 32, wherein the substrate comprises a secondary article integrally formed therewithin and further comprising polyurethane applied to the substrate at one or more areas adjacent the secondary article.

37. (Withdrawn) The sound attenuating laminate of Claim 27, wherein the article is a firewall and the sound attenuating laminate is a dashboard insulator.

38. (Withdrawn) The sound attenuating laminate of Claim 27, wherein the article is a vehicle floor and the sound attenuating laminate is a floor covering.

39. (Withdrawn) The sound attenuating laminate of Claim 27, wherein the article is a vehicle panel and the sound attenuating laminate is a vehicle interior trim component.

40. (Withdrawn) A vehicle, comprising:
a panel; and
a sound attenuating laminate attached to the panel, wherein the sound attenuating laminate comprises:
a substrate having a shape of the panel; and
polyurethane attached to selected portions of the substrate, wherein the polyurethane is non-porous and is configured to attenuate sound passing through the vehicle panel and substrate.

41. (Withdrawn) The vehicle of Claim 40, wherein the substrate comprises thermoformable fibrous material.

42. (Withdrawn) The vehicle of Claim 40, wherein the polyurethane comprises a filler selected from the group consisting of calcium carbonate, calcium hydroxide, aluminum trihydrate, talc, bentonite, barytes, silica, clay and mica.

43. (Withdrawn) The vehicle of Claim 40, wherein the polyurethane comprises:
a layer of polyurethane having a substantially constant thickness; and
additional non-porous polyurethane added to one or more selected portions of the polyurethane layer.

44. (Withdrawn) The vehicle of Claim 40, wherein the polyurethane comprises a layer of polyurethane having a first thickness in a first portion and a second thickness greater than the first thickness in a second portion.

45. (Withdrawn) The vehicle of Claim 40, wherein the substrate comprises opposite first and second surfaces, wherein the first surface is configured to be attached to the panel in contacting face-to-face relationship therewith, and wherein the polyurethane is attached to selected portions of the substrate second surface.

46. (Withdrawn) The vehicle of Claim 45, further comprising additional non-porous polyurethane added to one or more selected portions of the polyurethane.

47. (Withdrawn) The vehicle of Claim 45, wherein the substrate first surface has one or more recessed portions formed therein, and wherein polyurethane is applied in the one or more recessed portions.

48. (Withdrawn) The vehicle of Claim 45, wherein the substrate second surface has one or more recessed portions formed therein, and wherein polyurethane is applied in the one or more recessed portions.

49. (Withdrawn) The vehicle of Claim 45, wherein the substrate comprises a secondary article integrally formed therewithin and further comprising polyurethane applied to the substrate at one or more areas adjacent the secondary article.

50. (Withdrawn) The vehicle of Claim 40, wherein the panel is a firewall and the sound attenuating laminate is a dashboard insulator.

51. (Withdrawn) The vehicle of Claim 40, wherein the panel is a vehicle floor and the sound attenuating laminate is a floor covering.

52. (Original) A method of forming a sound absorbing laminate, comprising:
ascertaining acoustic properties of an article on which the sound absorbing laminate is to be placed to identify areas wherein additional sound absorption characteristics are necessary;
forming a substrate in the shape of the article, wherein the substrate comprises opposite first and second surfaces, and wherein the substrate first surface is configured to be attached to the article in face-to-face relationship therewith; and
applying a layer of breathable polyurethane on the substrate second surface, wherein the polyurethane is applied substantially only in the identified areas wherein enhanced sound absorption characteristics are required.

53. (Original) The method of Claim 52, further comprising attaching upholstery material to the polyurethane layer.

54. (Original) The method of Claim 52, wherein the substrate comprises thermoformable fibrous material.

55. (Original) The method of Claim 52, wherein the polyurethane is applied by spraying.

56. (Original) The method of Claim 52, wherein the polyurethane comprises a filler selected from the group consisting of calcium carbonate, calcium hydroxide, aluminum trihydrate, talc, bentonite, barytes, silica, clay and mica.

57. (Original) The method of Claim 52, wherein the article is a vehicle firewall and the sound absorbing laminate is a dashboard insulator.

58. (Original) The method of Claim 52, wherein the article is a vehicle floor and the sound absorbing laminate is a floor covering.

59. (Original) The method of Claim 52, wherein the article is a vehicle panel and the sound absorbing laminate is a vehicle interior trim component.

60. (Original) The method of Claim 52, wherein applying polyurethane on the substrate comprises:

applying polyurethane on the substrate to form a polyurethane layer having a substantially constant thickness; and

spraying additional polyurethane on one or more selected portions of the polyurethane layer.

61. (Original) The method of Claim 52, wherein applying polyurethane on the substrate comprises applying polyurethane on the substrate to form a polyurethane layer having a first thickness in a first portion and a second thickness greater than the first thickness in a second portion.

62. (Original) The method of Claim 52, wherein applying polyurethane on the substrate comprises:

identifying areas of the substrate in which apertures are to be formed; and
avoiding the identified areas when applying the polyurethane onto the substrate.

63. (Original) The method of Claim 52, wherein the substrate has one or more recessed portions formed therein, and wherein applying polyurethane onto the substrate comprises applying polyurethane into the one or more recessed portions.

64. (Original) The method of Claim 52, wherein forming a substrate in the shape of the article comprises integrally forming a secondary article with the substrate, and wherein applying polyurethane onto the substrate comprises applying polyurethane into areas adjacent the secondary article.

65. (Original) A method of forming a sound absorbing laminate, comprising:
ascertaining acoustic properties of an article on which the sound absorbing laminate is to be placed to identify areas wherein additional sound absorption characteristics are necessary;
applying a layer of breathable polyurethane within a mold;
applying additional breathable polyurethane to the breathable polyurethane layer at selected locations where enhanced sound absorption characteristics are required;
attaching a substrate to the layer of breathable polyurethane; and
forming the substrate and breathable polyurethane via the mold into a sound absorbing laminate having a shape of the article, wherein the substrate is configured to be attached to the article in face-to-face relationship therewith.

66. (Original) The method of Claim 65, further comprising attaching upholstery material to the sound absorbing laminate.

67. (Original) The method of Claim 65, wherein the substrate comprises thermoformable fibrous material.

68. (Original) The method of Claim 65, wherein the polyurethane is applied by spraying.

69. (Original) The method of Claim 65, wherein the polyurethane comprises a filler selected from the group consisting of calcium carbonate, calcium hydroxide, aluminum trihydrate, talc, bentonite, barytes, silica, clay and mica.

70. (Original) The method of Claim 65, wherein the article is a vehicle firewall and the sound absorbing laminate is a dashboard insulator.

71. (Original) The method of Claim 65, wherein the article is a vehicle floor and the sound absorbing laminate is a floor covering.

72. (Original) The method of Claim 65, wherein the article is a vehicle panel and the sound absorbing laminate is a vehicle interior trim component.

73. (Withdrawn) A sound absorbing laminate, comprising:
a substrate in the shape of an article, wherein the substrate comprises opposite first and second surfaces, and wherein the substrate first surface is configured to be attached to the article in face-to-face relationship therewith; and
a layer of breathable polyurethane on the substrate second surface, wherein the polyurethane is configured to enhance sound absorption characteristics.

74. (Withdrawn) The sound absorbing laminate of Claim 73, further comprising upholstery material attached to the polyurethane layer in face-to-face contacting relationship therewith.

75. (Withdrawn) The sound absorbing laminate of Claim 73, wherein the substrate comprises thermoformable fibrous material.

76. (Withdrawn) The sound absorbing laminate of Claim 73, wherein the polyurethane comprises a filler selected from the group consisting of calcium carbonate, calcium hydroxide, aluminum trihydrate, talc, bentonite, barytes, silica, clay and mica.

77. (Withdrawn) The sound absorbing laminate of Claim 73, wherein the article is a vehicle firewall and the sound absorbing laminate is a dashboard insulator.

78. (Withdrawn) The sound absorbing laminate of Claim 73, wherein the article is a vehicle floor and the sound absorbing laminate is a floor covering.

79. (Withdrawn) The sound absorbing laminate of Claim 73, wherein the article is a vehicle panel and the sound absorbing laminate is a vehicle interior trim component.

80. (Withdrawn) The sound absorbing laminate of Claim 73, wherein the polyurethane has a non-constant thickness on the substrate.

81. (Withdrawn) The sound absorbing laminate of Claim 73, wherein the substrate has one or more recessed portions formed therein, and wherein polyurethane is disposed within the one or more recessed portions.

82. (Withdrawn) The sound absorbing laminate of Claim 73, wherein the substrate comprises a secondary article integrally formed therewithin and further comprising polyurethane applied to the substrate at one or more areas adjacent the secondary article.

83. (Withdrawn) A vehicle, comprising:
a panel; and
a sound absorbing laminate attached to the panel, wherein the sound absorbing laminate comprises:

a substrate in the shape of the panel, wherein the substrate comprises opposite first and second surfaces, and wherein the substrate first surface is configured to be attached to the panel in face-to-face relationship therewith;
and

a layer of breathable polyurethane on the substrate second surface, wherein the polyurethane is configured to enhance sound absorption characteristics.

84. (Withdrawn) The vehicle of Claim 83 further comprising upholstery material attached to the polyurethane layer in face-to-face contacting relationship therewith.

85. (Withdrawn) The vehicle of Claim 83, wherein the substrate comprises thermoformable fibrous material.

86. (Withdrawn) The vehicle of Claim 83 wherein the polyurethane comprises a filler selected from the group consisting of calcium carbonate, calcium hydroxide, aluminum trihydrate, talc, bentonite, barytes, silica, clay and mica.

87. (Withdrawn) The vehicle of Claim 83, wherein the panel is a firewall and the sound absorbing laminate is a dashboard insulator.

88. (Withdrawn) The vehicle of Claim 83, wherein the panel is a vehicle floor and the sound absorbing laminate is a floor covering.

89. (Withdrawn) The vehicle of Claim 83, wherein the polyurethane has a non-constant thickness on the substrate.

90. (Withdrawn) The vehicle of Claim 83, wherein the substrate has one or more recessed portions formed therein, and wherein polyurethane is disposed within the one or more recessed portions.

91. (Withdrawn) The vehicle of Claim 83, wherein the substrate comprises a secondary article integrally formed therewithin and further comprising polyurethane applied to the substrate at one or more areas adjacent the secondary article.

92. (Withdrawn) A method of producing a carpet assembly for use in vehicles, comprising:

providing a substrate having opposite first and second surfaces, wherein the substrate first surface is configured to be attached to a vehicle panel in contacting face-to-face

relationship therewith, and wherein the substrate has elastic memory such that the substrate is unable to maintain an unassisted non-flat configuration;

applying a layer of uncured, breathable polyurethane onto the substrate second surface such that the substrate becomes moldable;

attaching a porous carpet layer to the substrate, wherein the carpet layer comprises a backing, and wherein the backing is in contacting face-to-face relationship with the breathable polyurethane layer;

forming the carpet layer and substrate into a desired shape; and

subjecting the breathable polyurethane layer to conditions sufficient to cure breathable polyurethane layer such that the substrate and carpet layer are bonded together to form a porous, breathable carpet assembly having the desired shape.

93. (Withdrawn) The method of Claim 92, wherein applying a layer of uncured, breathable polyurethane onto the substrate second surface comprises spraying uncured, breathable polyurethane onto the substrate second surface.

94. (Withdrawn) The method of Claim 92, wherein the substrate comprises thermoformable fibrous material selected from the group consisting of natural fibers, man-made fibers, and blends of natural fiber and man-made fibers.

95. (Withdrawn) The method of Claim 92, further comprising applying additional breathable polyurethane on one or more selected portions of the substrate first surface to enhance sound absorption characteristics of the carpet assembly.

96. (Withdrawn) The method of Claim 92, further comprising applying polyurethane on one or more selected portions of the substrate first surface, wherein the polyurethane is non-porous and is configured to enhance sound attenuation characteristics of the carpet assembly.

97. (Withdrawn) A porous, breathable carpet assembly for use in vehicles, comprising:

a substrate having opposite first and second surfaces, wherein the substrate first surface is configured to be attached to a vehicle panel in contacting face-to-face relationship therewith, and wherein the substrate has elastic memory such that the substrate is unable to maintain an unassisted non-flat configuration; and

a porous carpet layer adhesively secured to the substrate via a breathable polyurethane layer, wherein the carpet layer comprises a backing, and wherein the backing is in contacting face-to-face relationship with the breathable polyurethane layer.

98. (Withdrawn) The porous, breathable carpet assembly of Claim 97, wherein the substrate comprises thermoformable fibrous material selected from the group consisting of natural fibers, man-made fibers, and blends of natural fiber and man-made fibers.

99. (Withdrawn) The porous, breathable carpet assembly of Claim 97, further comprising additional breathable polyurethane on one or more selected portions of the substrate first surface, wherein the additional breathable polyurethane enhances sound absorption characteristics of the carpet assembly.

100. (Withdrawn) The porous, breathable carpet assembly of Claim 97, further comprising additional polyurethane on one or more selected portions of the substrate first surface, wherein the additional polyurethane is non-porous and is configured to enhance sound attenuation characteristics of the carpet assembly.

101. (Withdrawn) The porous, breathable carpet assembly of Claim 97, wherein the substrate first surface has one or more recessed portions formed therein, and further comprising polyurethane applied within the one or more recessed portions.

102. (Withdrawn) A vehicle, comprising:
a floor panel; and
a porous, breathable carpet assembly attached to the floor panel, wherein the porous, breathable carpet assembly comprises:

a substrate having opposite first and second surfaces, wherein the substrate first surface is configured to be attached to a vehicle panel in contacting face-to-face relationship therewith, and wherein the substrate has elastic memory such that the substrate is unable to maintain an unassisted non-flat configuration; and

a porous carpet layer adhesively secured to the substrate via a breathable polyurethane layer, wherein the carpet layer comprises a backing, and wherein the backing is in contacting face-to-face relationship with the breathable polyurethane layer.

103. (Withdrawn) The vehicle of Claim 102, wherein the substrate comprises thermoformable fibrous material selected from the group consisting of natural fibers, man-made fibers, and blends of natural fiber and man-made fibers.

104. (Withdrawn) The vehicle of Claim 102, further comprising additional breathable polyurethane on one or more selected portions of the substrate first surface, wherein the additional breathable polyurethane enhances sound absorption characteristics of the carpet assembly.

105. (Withdrawn) The vehicle of Claim 102, further comprising additional polyurethane on one or more selected portions of the substrate first surface, wherein the additional polyurethane is non-porous and is configured to enhance sound attenuation characteristics of the carpet assembly.

106. (Withdrawn) The vehicle of Claim 102, wherein the substrate first surface has one or more recessed portions formed therein, and further comprising polyurethane applied within the one or more recessed portions.



Attorney's Docket No. 998-816

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Messina *et al.*

Application Serial No.: 09/990,115

Filed: November 21, 2001

For: **SOUND ATTENUATING/ABSORBING LAMINATES AND METHODS OF MAKING SAME**

Group Art Unit: 1771

Confirmation No.: 2803

Examiner: Cole, Elizabeth M.

Date: December 13, 2004

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**TRANSMITTAL OF APPEAL BRIEF
(PATENT APPLICATION--37 C.F.R. § 41.37)**

1. Transmitted herewith is the APPEAL BRIEF for the above-identified application, pursuant to the Notice of Appeal filed on November 10, 2004.

2. This application is filed on behalf of
☐ a small entity.

3. Pursuant to 37 C.F.R. § 41.20(b)(2), the fee for filing the Appeal Brief is:
☐ small entity \$250.00
☒ other than small entity \$500.00

Appeal Brief fee due **\$500.00**

☒ Any additional fee or refund may be charged to Deposit Account 50-0220.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR § 1.10 on the date indicated above and is addressed to: Mail Stop Appeal Brief-Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Erna A. Campion